
**Before the
Federal Communications Commission
Washington DC**

In the Matter of)	
)	
Improving Public Safety Communications)	
In the 800 MHz Band)	WT Docket No. 02-55
)	DA 02-2202
Consolidating the 900 MHz Industrial/Land)	
Transportation and Business Pool Channels)	

To: The Wireless Telecommunications Bureau

**Comments of the United Telecom Council and
the Edison Electric Institute on the Public Notice**

Respectfully submitted,

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Summary

The United Telecom Council (UTC) and the Edison Electric Institute (EEI) urge the FCC not to adopt the Private Wireless Compromise proposal, or any other requiring mandatory retuning of 800 MHz incumbents, without resolving major issues affecting the future efficiency of this important frequency band. Among these are the need for adequate and guaranteed funding of any mandated retuning by any incumbent licensee and a need to encourage the implementation of advanced, more efficient technology across all of the band. These and other questions must be answered in order to justify the FCC's abandonment of its own principles of regulatory flexibility and solutions by the market rather than a regulatory agency.

UTC repeats, and EEI joins, its call for rules that will eliminate current, and prevent future, interference through updated technical parameters, coupled with regulatory flexibility to permit licensees of all user groups to re-locate as desired. Not only will this concentrate work and funding where it is needed through contractual agreements; it will also promote the shared systems across outdated pool boundaries that are necessary for interoperability and to fund expensive new technology requiring large amounts of spectrum. One commercial entity should not be the only 800 MHz licensee capable of using new technology due to the continuation of outmoded rules. Further, technical restrictions on the use of part of the spectrum should not be imposed where they are severely detrimental to that entity's chief competitor.

Should the FCC decide to impose the PWC Compromise, Motorola's proposal or a similar plan, it should allow critical infrastructure licensees an opportunity to relocate to frequencies other than the "guard band", which is likely to receive the most

interference from adjacent low-site operations. Incumbents already on guard band frequencies should be permitted a funded migration off these frequencies, and full co-channel spacing should be restored to reflect the differences in technology to be operated by Public Safety or other new licensees on vacated frequencies. Finally, the FCC should use the “comparable facilities” rules developed for the upper portion of the 800 MHz band as a basis for ensuring the continued reliable operation of incumbent systems forced to retune.

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I. Introduction

The United Telecom Council (UTC) is pleased to offer its comments on the Public Notice in the above-referenced proceeding.¹ While UTC has commented previously on the proposal submitted by the Private Wireless Coalition and other parties, it did so prior to reviewing the actual submission,² as well as those of other commenters such as Motorola, Inc.³ UTC, as an interested party acting on behalf of many licensees of large and small systems in the 800 MHz band, therefore appreciates this opportunity to respond to the proposals now before the Wireless Telecommunications Bureau (WTB, the Bureau) and the Commission.

UTC is joined in these comments by the Edison Electric Institute (EEI). EEI is the association of the United States investor-owned electric utilities and industry associates worldwide. Its U.S. members serve 99 percent of all customers served by the shareholder segment of the U.S. industry. It frequently represents its U.S. members before Federal agencies, courts, and Congress in matters of common concern.

UTC/EEI urges the Bureau and the Commission to look beyond the immediate problem requiring resolution – that of interference to Public Safety and other licensees from new technology -- and seek a regulatory framework that will secure the long-term health of this vitally important private land mobile radio (PLMR) frequency band. This proceeding must involve more than a re-shuffling of eligibles for various pools into new pools. Its outcome must enable the many segments of the U.S. economy that rely on

¹ "Wireless Telecommunications Bureau Seeks Comment on 'Consensus Plan' Filed in the 800 MHz Public Safety Interference Proceeding," *Public Notice*, DA 02-2202, released September 6, 2002 (PN, the Notice). On September 16, 2002, the PN was clarified to include all 800 MHz proposals submitted as reply comments in this proceeding **[cite clarification PN]**.

² Joint Reply Comments of the Public Safety Organizations, the Private Wireless Coalition and Nextel , WT Docket No. 02-55, filed August 7, 2002 (PWC Compromise).

³ Reply Comments of Motorola, Inc., WT Docket No. 02-55, filed August 7, 2002 (Motorola Proposal).

these frequencies to be able to move to efficient new technologies as their industries require, and to do so across outdated user group boundaries. UTC/EEI reminds the Bureau and the Commission of their key regulatory goals of flexibility and market-based solutions. These goals can be met within the framework of private wireless needs and the Commission's previous decision not to auction PLMR spectrum in this band,⁴ and UTC/EEI urges it to do so.

II. The PWC Compromise and Other Proposals Calling for Mandatory Retuning Include Significant Weaknesses That Must Be Addressed.

As stated in its Reply Comments, UTC and its members were not included in the discussions leading to the PWC Compromise.⁵ The Council was hopeful that the eventual proposal would provide an integrated solution in accordance with the Commission's stated goals of eliminating harmful interference to Public Safety and other systems at a minimum disruption to licensees, while offering a regulatory framework that would meet future needs of users in the band. However, neither the PWC Compromise or other submitted proposals calling for mandatory re-banding answer key questions that would justify the Commission's acting in a manner completely contradictory to its stated policies of flexibility and market-based solutions. UTC has been unable to gain a response or attention to its concerns from members of the PWC.

The PWC compromise calls for Nextel Communications to leave its frequencies in the General Category and interleaved pools below 861 MHz, and all licensees in the

⁴ See, Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum-Efficient Technologies on Certain Part 90 Frequencies; Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz; Petition for Rulemaking of the American Mobile Telecommunications Association, *Report and Order and Further Notice of Proposed Rulemaking*, WT Docket No. 99-87, 15 FCC Rcd 22709 (2000).

⁵ Due to the large size of the systems of many UTC members and other commenters that have not supported the PWC Compromise, UTC questions the PWC's claims concerning the percentage of support its proposal enjoys.

General Category would be required to re-tune to portions of the vacated spectrum, Public Safety agencies first. Then, Public Safety licensees in the NPSPAC frequencies would move to the lowest 3 MHz of the band, 851-854 MHz. Nextel would gain the 866-869 MHz portion of the band, and also would be provided spectrum in the 1.9 GHz band in exchange for its current holdings below 861MHz. "Cellularized" systems meeting the PWC's definition of the term would not be permitted below 861 MHz without a waiver of FCC Rules. PWC would define a "cellular" system as one with 1) more than five overlapping, interactive sites featuring hand-off capability; 2) sites with antenna heights of less than 100 feet above ground level on HAATs of less than 500 feet; and 3) sites with more than 20 paired frequencies.⁶ A "guard band" of two megahertz (859-861 MHz), in spite of its proximity to low-site CMRS operations, would be the likely home of current site-specific, non-Public Safety PLMR eligibles moving from the General Category. Other, carefully timed retuning would be necessary to accomplish the mandated changes in the band. Finally, traditional Public Safety eligibles would receive a five-year preference for any remaining vacated Nextel frequencies below 861 MHz.⁷

Motorola's proposal re-states key principles for a new regulatory framework; among these, it calls upon the Commission to "[e]nsure that critical infrastructure users also have sufficient spectrum, adjacent to public safety for interoperability required during emergencies."⁸ However, its proposal for the 800 MHz band is similar to the

⁶ See, PWC Compromise at 10.

⁷ In the event of mandatory retuning, UTC/EEI does support the PWC's call for LMCC involvement. **All** 800/900 MHz frequency coordinators must be included in any retuning process to ensure the specific system needs of particular industries are met.

⁸ Motorola Proposal at 3. UTC notes that it has not requested spectrum dedicated to critical infrastructure in the 800 MHz band – as stated in its previous comments, it considers the 800 MHz too important to all of private wireless and too congested for any user group to be able to justify a demand for additional spectrum, and believes migration to advanced technology will require cooperation across formerly disparate groups.

PWC Compromise. It would, however, be more difficult to implement, since it would require that “the amount of spectrum available to cellular-like, ESMR systems, public safety systems and non-public safety systems would vary geographic market depending on the amount of spectrum currently licensed to each category.”⁹ UTC/EEI notes that Motorola concedes the need to mix technologies within portions of the band due to the variety of technologies already in operation, as well as the need for cavity combiners, both elements of UTC/EEI’s view of the 800 MHz future.¹⁰ However, its proposal’s complexity raises issues such as the definition of a “market” for purposes of defining the amount of spectrum available to each long-defined user group, in any given location, prior to any actual retuning. This is no small task given that Business, Industrial/Land Transportation and Public Safety systems are licensed on a site-specific basis that follows no consistent geographic boundaries. Once again, UTC/EEI submits that this sort of mammoth undertaking is contrary to Commission principles, is not necessary and would in fact hinder the future growth of a multi-user-group band.

In spite of continued discussions among its many members that would be affected by this proposal, UTC/EEI remains unable to support the PWC Compromise or other proposals calling for mandatory retuning of licensees based on outdated eligibility criteria. There are several extremely important issues for which the PWC does not yet have answers. UTC/EEI and its members consider these issues too important to ignore in search of consensus, and urge the Commission either to resolve, or to require thoughtful resolutions from the parties involved, before considering adoption of the PWC compromise or any other proposal.

⁹ Id. at 7.

¹⁰ Id. at 12-13.

A. No Mandatory Retuning Proposal Includes an Adequate Funding Mechanism.

Although the compromise proposal would require less mandatory retuning than other proposals, many hundreds of licensees and systems would be impacted. UTC/EEI members alone would incur tens of millions of dollars in costs to retune to other portions of the 800 MHz band, whether currently affected by CMRS interference or not. Total costs to Public Safety, Business, Industrial/Land Transportation, SMR and CMRS licensees under the compromise proposal would run into the hundreds of millions of dollars.

However, the only funding UTC/EEI understands to be included in the compromise proposal is the original \$500 million pledged by Nextel to reimburse traditional Public Safety licensees, and it has been recognized generally that this amount likely will be insufficient even for this purpose. UTC/EEI has not seen any proposal offer a reasonable plan to fund retuning by large, mission-critical systems such as those operated by many utilities, or smaller critical infrastructure and other Business and Industrial/Land Transportation or SMR systems.

Dozens of commenters in this proceeding have stressed that any licensees affected by mandatory retuning must be compensated fully. How to do so is complicated by the absence of a clear beneficiary in all instances of 800 MHz re-banding that should bear the reimbursement costs. . UTC/EEI believes that a process of voluntary retuning through contractual agreement is preferable to wholesale mandatory retuning because it minimizes the disruption to incumbents, eliminates the uncertainty inherent in a years-long daisy-chain retuning process, and encourages market-based solutions for reimbursement that are more likely to ensure that incumbents are made whole.

UTC/EEI also is concerned that the efforts of all parties concerned may come to nothing in spite of an FCC decision to implement a mandatory retuning proposal. Should the required amount of funding for all incumbent systems not be forthcoming, the PWC Compromise states that retuning will not take place.¹¹ Since adequate funding is not included in the PWC Compromise or Motorola proposal, UTC/EEI believes it quite likely that the complex proposed process would end before Public Safety interference problems are solved.¹² UTC/EEI urges the Commission not to impose rules upon the many parties involved in this band when means have not been identified to complete the process.

B. Any New Framework Must Provide for Equivalent Border-Area Frequencies.

None of the many proposals advanced as solutions to this complex problem has dealt adequately with the issue of border areas. There are fewer frequencies available for license in the Canadian border regions above Line A, and there are both fewer, and offset, frequencies that complicate licensing in the Mexican border region below Line C. As the Commission knows, the border area frequencies are the product of lengthy negotiations leading to international treaties. It is questionable whether the existing bandplan for these regions could or should be changed in an FCC regulatory proceeding.

¹¹ See, PWC Compromise at 20.

¹² UTC/EEI also has serious concerns with the limitations placed by Nextel even on its promised \$500 million for public safety, including the requirement that all challenges to the Commission's decision in this proceeding be resolved, and that no further contributions to an independently administered fund after the fourth anniversary of its second \$50 million payment. See, Reply Comments of Nextel Communications, Inc., WT Docket No. 02-55, filed August 7, 2002, at 31-32. This deadline easily could pass prior to the completion of challenges to new rules and the relocation process.

Many CI entities operate partially or wholly within these border areas and are concerned greatly about the possibility that they would lose access to heavily used frequencies in a re-banding effort. Due to the restrictions on availability, simply retuning to other frequencies generally would not be possible for these licensees. UTC/EEI urges that any re-banding solution for the rest of the country also account for the impact on licensees in the Canadian and Mexican border areas. If the FCC determines that it is authorized to change the border area bandplans, licensees in these regions must have access to at least the same number of frequencies as are available now. These licensees also must receive the benefit of any technical rules amendments designed to prevent interference to their systems.

C. Any “Guard Band” Rules Should Include Funded Migration and a Return to Full Co-channel System Spacing.

Another issue arises from the PWC compromise proposal for a “guard band” from 859-861 MHz. While specific proposed rules for the guard band are unclear, there has been discussion that lower power levels and reduced operating areas would be required in this portion of the band to provide a buffer between cellularized CMRS and traditional Public Safety systems.

UTC has already stated its opposition to CI entities being forced into a band where they would be subjected to increased harmful interference from cellularized CMRS operations. The Council also is concerned that new rules would adversely impact CI systems already located in the proposed guard band; for example, by requiring some frequencies in a wide-area utility communications system to operate at lower power levels than other frequencies at the same base station location. Such restrictions would hamper the development of trunked or more efficient systems, and

could even pose a danger to CI personnel communicating on more than one frequency during a conversation. Utility workers operating on or near high-power lines, for example, cannot afford to lose communications suddenly because their radios switch to a lower-power guard band frequency. Nor should CI entities be required to simply cease using important frequencies to avoid the problem. To eliminate this danger, UTC/EEI recommends that, should the FCC consider adopting the PWC compromise proposal, 1) critical infrastructure licensees moving from the General Category should not be forced into “guard band” frequencies, 2) incumbent systems on the guard band frequencies should be grandfathered under existing rules, and 2) these incumbents should be permitted to migrate voluntarily to any vacated spectrum lower in the 800 MHz band, with that migration funded under rules similar to other retuning under the new rules.

UTC/EEI also urges that , in the event the PWC Compromise is adopted, licensing on vacated Nextel frequencies between 854 MHz and 861 MHz revert to the full 70-mile co-channel spacing specified in Section 90.621(b) of the Commission’s Rules.¹³ Many critical infrastructure systems, as well as those of other private wireless entities, are short-spaced by Nextel operations on current frequencies to such an extent that they cannot modify their operations to meet service needs. UTC members report that these limitations often can be overcome currently through negotiation with Nextel; however, re-licensing to analog Public Safety systems during a five-year Public Safety preference could result in severe difficulties and interference if similar short-spacing were permitted. Since Nextel’s short-spaced base station locations were engineered for

¹³ 47 C.F.R. §90.621(b).

a lower power, digital system, the same spacing would not be appropriate for older technology and should not be used.¹⁴

D. Stricter Technical Rules Would Eliminate Interference While Permitting Flexibility.

As has been stated by too many commenters to count, re-banding under existing technical rules will not eliminate interference. UTC and EEI can speak only on behalf of their own members, but believes it unacceptable to allow some licensees to cause harmful interference to others simply because the existing technical rules failed to anticipate interference between cellularized and other systems. The PWC compromise, after moving large groups of licensees around the band, also would not eliminate all interference, especially intermodulation. Nor is UTC/EEI aware of any recommendations for changes to technical rules in the compromise proposal that might diminish further the potential for interference.

All parties agree that system-specific engineering solutions will be required during the several years necessary to effect retuning. UTC/EEI submits that they will also be necessary to accommodate inevitable technology changes after this process. Whether traditional-thinking private wireless interests like it or not, we will continue to have a mix of technologies in the 800 MHz band, and better, updated technical rules are necessary to ensure that all types of technology can co-exist. If hundreds of licensees on this band go through the complex, expensive, disruptive process inherent in mandatory retuning and do not have technical rules geared for the future, the entire “separation” process will be for nothing, because interference will re-appear.

¹⁴ UTC/EEI also urges a waiver process by which other licensees may be eligible for vacated Nextel frequencies during the proposed five-year Public Safety preference period upon a showing of need. The

After significant work by RF engineers from several UTC member companies, UTC offered specific recommendations in its Reply Comments for stricter technical rules to eliminate interference regardless of bandplan. UTC/EEI urges the Commission to adopt these or similar standards regardless of whether it decides to change the 800 MHz structure.

E. Technology Restrictions Would Hinder Growth and Are Counter to Commission Policy.

As stated above, UTC/EEI understands that the PWC compromise would divide the existing 800 MHz allocation into cellularized and non-cellularized areas of operations, with the dividing line at 861 MHz. While UTC/EEI recognizes and supports Public Safety's need to avoid, not just resolve interference, the Council is concerned that this framework would hamper unnecessarily the growth of advanced technology and discriminate against existing systems. As UTC has stated repeatedly, utilities and other CI entities are moving toward more advanced technology, including digital systems that often will be shared with traditional Public Safety entities. While the PWC compromise makes an effort to define cellular architecture, the definition could be met by base stations of large systems in urban areas that do not cause interference, while truly "cellular" sites not meeting this definition may well cause interference. Given the variety of system equipment now in use or pending for future use in this band, UTC/EEI does not believe an accurate definition is possible, and suggests such barriers are neither workable nor desirable.

UTC/EEI is concerned that an inaccurate definition, restricting as it would the activities of all licensees across more than half the frequency band, places

availability of additional frequencies is a vital need of critical infrastructure communications systems to

unreasonable limits on the future of all industries using this band except a single commercial operator in the “right” area of it. The Council must beg the question: if technical rules governing this band prevent interference among adjacent systems, what difference does it make what technology – analog, digital, high-site or low-site – is in use? Technical rules requiring sound engineering in implementing such systems and quick resolution of any interference would seem to make arbitrary, technology-based restrictions unnecessary. Further, it has not been the Commission’s practice in recent years to dictate appropriate technology

There would also be harm to existing licensees: the compromise proposal appears to discriminate seriously against SouthernLINC’s existing CMRS system. UTC/EEI understands that more than ninety percent (90%) of SouthernLINC’s licensed spectrum is currently below 861 MHz: under the compromise proposal, it would not gain access to any designated cellularized spectrum above 861 MHz, nor to the proposed Nextel-only spectrum in the 1.9 GHz band. At the same time, SouthernLINC’s iDEN™ subscriber base is growing, and its system includes operations in major metropolitan areas of the Southeast where carefully engineered facilities meeting the cellularized definition will be needed to meet customer demand. SouthernLINC would not be able to implement any needed expansion, regardless of whether new sites might actually cause interference, under the PWC compromise. UTC/EEI notes that private, internal utility and other industrial systems in metropolitan areas, where multiple base stations are needed for adequate coverage, also would not be able to serve their end users under the proposed rules.

meet service expansion and safety/reliability regulatory requirements.

UTC/EEI suggests that SouthernLINC's situation, while currently unusual among 800 MHz licensees, is an immediate example of the pitfalls of imposing technology-based restrictions with unforeseen anti-competitive consequences. It can hardly be the Commission's goal to drive a competitive business, using advanced, digital technology, out of business by adopting new rules that focus on its competitor.

III. Should the FCC Require Mandatory Retuning in the 800 MHz Band, It Must Protect Incumbent Systems Consistent with Previous Decisions.

UTC/EEI does not support mandatory retuning of entire sections of the band to eliminate scattered incidents of interference. However, should the Commission decide to implement a bandplan that requires mandatory retuning, it must adopt rules to protect incumbent systems that are consistent with past precedent.

In turning over the 861-866 MHz portion of the frequency band in the mid-1990s for re-licensing through competitive bidding, the Commission noted that, "[f]or incumbents to be treated fairly under our relocation mechanism, they need information and certainty about the EA licensees' relocation plans, and must receive this information as soon as possible."¹⁵ To help accomplish this, the FCC adopted a two-phase negotiation period and a notification requirement, and required that incumbent licensees be retuned to "comparable facilities," even recognizing that "this 'seamless' transition obligation on the part of the EA licensee may require that a relocated incumbents' old system and its new post-relocation system operate simultaneously for a period in order to avoid significant service disruption."¹⁶

¹⁵ Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, *First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rulemaking*, PR Docket No. 93-144, 11 FCC Rcd 1463, 1510 (1995).

¹⁶ Id.

In a later decision in the same proceeding, the Commission adopted admirable rules to define comparable facilities.¹⁷ The FCC reiterated that incumbents must 1) receive the same number of channels with the same bandwidth, 2) have their entire systems relocated, and 3) once relocated, have the same 40 dBu service contour as their original systems.¹⁸ Further, the Commission defined comparable facilities to require that the change be transparent to the end user, and concluded that the relocating licensee must:

- Provide the relocated incumbent with a comparable **system**, defined as base station facilities that operate on an integrated basis to provide service to a common end user, and all mobile units associated with those base stations;
- Relocate the incumbent to facilities that provide equivalent system **capacity**, defined as the same number of channels with the same bandwidth as formerly available to the end user;
- Provide facilities offering the same **quality of service** as those being replaced, defined as the same level of interference protection, same voice quality where appropriate and same reliability;
- Equalize **operating costs**; if new facilities entail higher operating costs than the incumbent's previous system, and these are a direct result of the

¹⁷ Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, *Second Report and Order*, PR Docket No. 93-144, 12 FCC Rcd 19079, 19220-19114 (1997).

¹⁸ *Id.* at 19110.

relocation, the relocating licensee must compensate the incumbent for the difference.¹⁹

UTC/EEI submits that these criteria should form the basis for any retuning rights under a new regulatory framework for the rest of the 800 MHz band. Especially given the nature of many affected systems – used by traditional public safety agency and critical infrastructure personnel – duplicate systems would be necessary to ensure the safety of end users. The consideration of “system” is also important: while the PWC Compromise, for example, would require retuning of licensees primarily from the General Category, these frequencies often are part of much larger systems. Those entire systems must function at least as well after being retuned than before, meaning that the new frequencies and the equipment to be used on them, must be engineered properly to ensure that they are integrated into the whole.

Quality of service must be at least as good: UTC/EEI would argue that, since the purpose of this entire proceeding is to eliminate interference, that particular threshold should be raised significantly. The “same level of interference protection” and reliability would hardly be helpful to licensees moving to prevent further, or future, interference. Again, UTC/EEI urges the adoption of its recommended technical requirements as a means of providing better interference protection regardless of technology.

The Commission’s past decisions concerning 800 MHz retuning, however, reintroduce one of the dilemmas of this proceeding – who must pay, and why? Its earlier requirements were based on the clear benefit to new, geographic licensees of gaining access to clear, contiguous spectrum. In the proposed daisy chain of retuning involved under the PWC compromise or other proposals, no such clear benefit is apparent.

¹⁹ Id. at 19112-19113 (emphasis added).

UTC/EEI submits again that the Commission must resolve this issue in accordance with existing policy.

IV. Conclusion

UTC reiterates its concerns with the PWC Compromise and other mandatory retuning proposals, and with EEI, urges the Commission to consider its own regulatory policy goals and the future of this important band before making a decision in this proceeding. UTC/EEI requests respectfully that the Commission proceed in a manner consistent with the view expressed herein.